

### Contamination Areas

A limit of 100,000 dpm/100 cm<sup>2</sup> removable beta contamination limit is set for contamination areas, value obtained from Reference [1], Table 2-2.

A limit of 50,000 dpm/100 cm<sup>2</sup> removable alpha contamination limit is set for contamination areas, again this value was derived using the anticipated alpha to beta ratio.

Radiological control technicians should make note of the alpha to beta ratios present during contamination surveys. The approximate alpha:beta ratio for DU is 1:2. As U-235 is enriched, the specific alpha activity increases while the U-238 progeny beta activity decreases. For instance, the alpha:beta ratio at 10% U-235 enrichment is 12.5:2.0 (Reference [3], Table 5). Alpha:beta ratios outside of that predicted may be an indicator of enriched uranium or transuranics and will be investigated promptly if identified. If transuranic isotopes are confirmed, the RWP suspension guide limits will be revised to reflect the applicable limits.

#### Airborne Radioactivity Level SGL:

A limit of 10 DAC will be set when work is performed in supplied breathing air respiratory protection.

A limit of 10 DAC will be set when air purifying full-face respirators are worn.

A limit of 0.1 DAC when no respiratory protection is worn.

NOTE: DAC value based on U-238 Class Y ( $2 \times 10^{-11}$  uCi/ml), Reference 10 CFR 835, *Occupational Radiation Protection, Appendix A - Derived Air Concentrations (DAC) for Controlling Radiation Exposure to Workers at DOE Facilities*.

#### Radiation Exposure Rate SGL:

10 mrad/hr gamma at 30 cm from drum or debris, this limit will allow for continued operations and investigations should an anomaly be encountered while still adhering to the ALARA philosophy.

Attempts will be made to limit the general area dose rate to 2 mrad/hr.

Should dose rates in areas where materials accumulate such as at the SIP or staging area for radioactive material shipment exceed 5 mrem/hr then these localized areas will be controlled as radiation area and the dose rate of these areas will be limited to 10 mrem/hr.

1000 mrad/hr beta on contact with materials, drums or debris. This value is sufficiently above the maximum level identified in Table 2 *Beta Surface Dose Rates From Equilibrium Thickness of Uranium Metal and Compounds* to account for expected variations with radiation survey instrumentation, source geometry and low enough to implement the ALARA philosophy.

Work in progress neutron surveys are not required based on source term. Neutron surveys will be performed on drums and debris that exceed the gamma radiation exposure rate SGL.

6/23/98  
Field Change 2

# LOGSHEET FOR FIELD CHANGES TO CONTROLLED DOCUMENTS

Change Number	Date	Document Number	Document Title	Section/Page Modified	Description Of Change(s)	Responsible Manager Approval	ESHAQ Approval	Radiological Engineering Approval	Quality Assurance Approval	Completion Of ADM 2.01 Checklist	Completion Of SESUSQD Checklist
2	6-23-98	RF/RMRS-98-208	ALARA JOB REVIEW IHSS 108 TRENCH 1 SOURCE REMOVAL	Section 8 Page 13	Increased beta radiation on contact from 300mrad/hr to 1000 mrad/hr. Also clarified that SGL applies to the surface of the depleted uranium and other waste materials.	<i>Wick</i>	<i>yes</i>	<i>ABE</i>	<i>6/24/97</i>	<i>N/A</i>	<i>N/A</i>

1 Affixed signatures indicate that Operations Review Committee (ORC) and/or Independent Safety Reviews are NOT applicable because Scope and Fundamental Technical Specifications were NOT changed. Also, related documents affected by the change(s) were modified accordingly.